OSW Informational and Technical Note 2013.21 **April 3, 2013**

Subject: Additional Clarification and Guidance to OSW Technical Memorandum 2013.01

OSW Technical Policy Memorandum 2013.01 (http://water.usgs.gov/admin/memo/SW/sw13.01.pdf) gives guidance and policy on computation of Annual Exceedance Probability (AEP) for characterization of an observed flood peak. The memorandum emphasizes OSW's policy that if an AEP estimate is desired following a major flooding event, (for example, for inclusion in a published document, press release, or official correspondence), a new flood frequency analysis is required to be conducted to obtain the AEP estimate and that the current flood peak (or highest flood peak for the current water year to date) will be included as part of that new flood frequency analysis.

Flood-frequency analysis methods are evolving. OSW believes that the Expected Moment Algorithm (EMA) will soon be the standard flood-frequency method for all federal agencies. EMA differs from the traditional Bulletin 17B in the way that historic floods, censored observations, and low outliers are treated. Hence, EMA should be used to perform flood-frequency analyses involving historic observations, censored observations, and/or low outliers. EMA may also be used for all other flood frequency analysis as well given that it will give identical results to Bulletin 17B when historic observations, censored observations or low outliers are not involved. Currently, EMA is included in a beta version of the PEAKFQ software and is not officially available for widespread release. However, analysts needing to perform flood frequency analysis can request the Beta version of PEAKFQ from Kate Flynn (kmflynn@usgs.gov). Analysts requiring technical assistance in conducting a flood frequency analysis using EMA methods should contact Andrea Veilleux (aveilleux@usgs.gov) of OSW.

Flood-frequency analyses are typically performed on annual peaks. If the estimated AEP for an observed flood will be issued prior to the end of the water year in which the flood has occurred, the estimated AEP should be considered provisional until the end of the water year. If no larger flood occurs during the remainder of the water year, the estimated AEP can be considered as final.

Some Water Science Centers have stated their desire to have the option to provide an external agency or individual with a provisional estimate of the AEP based on statistics found in their most recently published flood frequency study. OSW strongly recommends that this not be done, particularly given the ease of computing the new flood frequency statistics with PEAKFQ. For those extenuating circumstances in which the previously published flood frequency statistics are used to issue a provisional AEP estimate, the Center must: 1) explicitly state that the estimate is provisional, 2) formally cite the publication that the AEP estimate is based upon, 3) clearly state that the AEP estimate does NOT include the current flood peak or

any other flood peaks occurring since the publication, and 4) follow the mathematical procedure specified in OSW TM 2013.01 to make the AEP estimate and compute the 66-percent confidence interval estimates.

/signed/

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